ANNUAL FIRE PROTECTION SUMMARY PREPARATION USER'S GUIDE

Revised: April 2010

Organizations responsible for maintaining property under stewardship of DOE and the Administrator, NNSA, will seek concurrence with their appropriate Head of Field Element and submit specifically formatted fire protection program CY summary reports to the Chief Health, Safety and Security Officer by April 30 of the following year. The Chief Health, Safety and Security Officer will provide reporting organizations and DOE Field Elements with a computer-based application for submitting formatted summaries and will maintain a database reporting system that compiles reports submitted in accordance with the reporting elements. The Chief Health, Safety and Security Officer will produce a CY summary of Fire Protection Programs for the Department and will make available a database summary of all reporting elements of DOE contractors and DOE Field Elements for trending data supplemental to the Environment, Safety and Health annual summary report.

1. SUMMARY OF FIRE LOSS DAMAGE INCIDENTS.

Fire loss includes property damage or loss sustained as a consequence of a fire. Fire loss is deemed reportable based upon the fire department incident report. If the event results in a dispatch, fire department response, and classification as a fire event, then the loss is considered to be reportable. Each fire loss event will include separate entries or fields for the following information.

NOTE: Reporting elements may submit electronic copies of incident logs, provided that such information complies with all required reporting attributes of the National Fire Incident Reporting System (NFIRS).

a. Date, location, dollar amount of loss, and incident description. The event description should include remedial actions taken to prevent event recurrence.

Criteria for estimating damage costs are provided as paragraphs 8 and 9 below of this Appendix.

b. Incidents, classified as—

- Fire/Smoke [Building],
- Fire/Smoke [Brush],
- Fire/Smoke [Vehicle], or
- Fire/Smoke [Other]

c. Causal factor(s) associated with the event, classified as—

- Weather Related,
- Employee Related
- Procedure Related,
- Other, or
- Unspecified.

d. Involvement of a fixed suppression system. Include the system type, method of actuation, the number of sprinkler heads activated (water-based suppression systems) or the quantity of agent discharged (nonwater-based suppression systems).

e. Related deaths or injuries resulting from this event.

f. A cross-reference to other DOE reports such as entries in the Occurrence Reporting and Processing System (ORPS), the Computerized Accident/Incident Reporting System (CAIRS) or local incident logs.

2. NON-FIRE INCIDENTS ACTUATING AUTOMATIC FIRE SUPPRESSION SYSTEMS.

Suppression system actuation can occur from fire or other loss events and are categorized as such to account for total property loss. Please see paragraph 1 above for information on determining fire loss and including an event description for incidents involving automatic suppression systems. Other losses include damage or loss sustained as a consequence of one of the following events:

• explosion;
• natural causes (such as earthquakes and hurricanes);
• electrical malfunction (not classified as fire);
• transportation (cargo) loss;
• mechanical malfunction; or
• radiation release or other nuclear accident, miscellaneous accidents (such as thermal, chemical, or corrosion-related accidents).

Summaries should include information on the actuation of any automatic suppression systems to identify and prevent recurrence.

Each incident resulting in the actuation of an automatic fire suppression system will include separate entries or fields containing the following information.

a. The date, location, dollar amount of loss, and incident description. The event description should include remedial actions taken to prevent recurrence. Criteria for estimating damage costs are provided in paragraphs 8 and 9 of this Appendix.

b. Incident classified as—

• Fire/Smoke [Building],
• Fire/Smoke [Brush],
• Fire/Smoke [Vehicle], or
• Fire/Smoke [Other]

c. Causal factor associated with the event, classified as—

• Weather Related,
• Employee Related,
• Procedure Related,
• Other, or
• Unspecified.

d. Involvement of a fixed suppression system. Include the system type, method of actuation, the number of sprinkler heads activated (water-based suppression systems) or the quantity of agents discharged (nonwater-based suppression systems).

e. Related deaths or injuries resulting from this event.

f. A cross-reference to other DOE reports such as entries in ORPS, the Computerized Accident/Incident Reporting System or local incident logs.

3. HALON REDUCTION ACTIVITIES.

a. Fixed Systems.

(1) Number of systems from previous reporting year _____

(2) Number of systems removed from service this period. _____

Include fixed, manually actuated, mobile or skid mounted systems that have been placed in inventory.

(3) Number of systems placed in service this period. _____
Include active system transfers between sites as well as systems that may have been temporarily placed in inventory.
(4) TOTAL NUMBER OF ACTIVE SYSTEMS THIS REPORTING YEAR _____
(5) Active system quantity from previous reporting year (Active systems are defined as those currently installed to suppress a fire and includes reserve capacity in a two-shot system. _____
(6) Quantity placed in service within the past year. _____
Include quantities of fixed, manually actuated, mobile or skid mounted systems that have been placed in inventory.
(7) Quantity removed from service within this period. _____
Include quantities of fixed, manually actuated, mobile or skid mounted systems that have been placed in inventory.
(8) Quantity released this period through leakage or actuation. _____
(9) TOTAL QUANTITY OF ACTIVE SYSTEMS THIS REPORTING YEAR _____
(10) Halon inventory from previous reporting year. _____
(11) Quantity added to inventory from item (7) above _____
(12) Quantity imported to inventory from other sites. _____
(13) Quantity exported offsite (banked). _____
(14) Quantity sold or excessed. _____
(15) TOTAL QUANTITY OF HALON INVENTORY THIS REPORTING YEAR._____

b. Hand-Held Halon Extinguishers.
(1) Active quantity from previous reporting year _____
(2) Quantity removed from service within this period. _____
(3) TOTAL QUANTITY OF ACTIVE HAND-HELD HALON EXTINGUISHERS THIS REPORTING THIS REPORTING YEAR. _____
(4) Halon inventory from previous reporting year. _____
(5) Quantity added to inventory from item (2) above. _____
(6) Quantity exported offsite (banked). _____
(7) Quantity sold or excessed. _____
(8) TOTAL QUANTITY OF HAND-HELD HALON EXTINGUISHER INVENTORY THIS REPORTING YEAR. _____

4. FIRE PROTECTION INSPECTION TESTING AND MAINTENANCE ACTIVITIES.
a. System Summary. Identify the type and number of systems inspected, tested, or maintained at the site this reporting period. Compare summary with the previous reporting period to determine any system summary modifications that may have taken place over the year. System types are identified in Table F-1.
b. All failures of fire protection systems (sprinkler systems, fire alarm systems, etc.) should be reported annually. Failure in this context is the inability to meet at least one of the operability requirements established for the system as part of the inspection, testing, and maintenance program. (Refer to DOE O 420.1A, Facility Safety, dated 5-20-02.)

Summaries should be provided for each system type at the site. System types are identified in Table F-1.

Table F-1. Fire Suppression System Types
Code Description

1A Wet Pipe Sprinkler System
1B Dry Pipe Sprinkler System
1C Deluge Sprinkler System
1D Pre-Action Sprinkler System
1E Foam-Water System
1F Water Spray System
1G Halon 1301 Systems
1H Halon 1211 Systems (Fixed)
1I Clean Agent Systems
1J Wet Chemical Systems
1K Dry Chemical Systems
1L Carbon Dioxide Systems
1M Other Fixed Water Application Equipment
1N Fire Pumps
1O Central Fire Alarm
1P Local Fire Alarm Systems

5. FIRE DEPARTMENT ACTIVITIES.
a. Number of Responses.
(1) Fire _____
(2) HAZMAT Response _____
(3) Other Emergency _____
(4) Non-Emergency _____
(5) Medical _____
(6) Mutual Aid Responses _____

Identify and classify all fire department response events. For this reason, each response should be recorded in a single fire department incident report from the first due or incident commander's perspective. The fire response category relates to working fires on the site that were either extinguished or verified as a fire event by the responding incident commander. HAZMAT response relates non-fire hazardous material incidents. The other emergency category is intended for all other emergencies in which firefighting apparatus was dispatched, including offsite mutual aid response, or support for a medical response. The non-emergency category relates to situations where the initial response was considered an emergency, but was later verified as a non-emergency by the incident commander. This includes inadvertent system actuation. Malicious alarms or offsite mutual aid that was cancelled en route. Medical response includes any response in which an ambulance was dispatched for the sole purpose of a medical emergency.
b. Major equipment purchases. Describe type of equipment and purchase price.
c. Notable response descriptions not already included in the report.

6. RECURRING FIRE PROTECTION PROGRAM COSTS.

a. Fire Department Costs.

(1) Staffing

(2) Equipment

(3) System Inspection and testing and Maintenance costs

(4) Emergency medical response costs

(5) Training program costs

b. Inspection and testing program costs by others.

c. Fire protection engineering.

The cost of an inspection and testing program by others is intended to identify work provided by other departments, such as a maintenance section or outside contractor. Do not include costs of mobile apparatus or other major equipment purchases. Provide additional explanation for significant deviations in recurring costs between calendar years.

7. PERFORMANCE EVALUATION.

a. Reporting elements should identify the most recent date, performance issues assessed, and outcome reached by the DOE Federal field element or DOE authority having jurisdiction on fire protection program performance.

b. Federal field elements: Provide and maintain an evaluation process for contractor performance. Suggested guidance is provided in Table F-2.

Table F-2. Program Performance Measures.

Code Performance Measure

P0 FIRE PROTECTION ENGINEERING

P1 Site fire protection program documents are comprehensive (as compared to the DOE Fire Protection Handbook) and updated every 3 years.

P2 Fire hazards analyses/fire protection program assessment reports are complete (as compared to the examples in the DOE Fire Protection Handbook) and current. (Refer to the DOE G 440.1-5, Implementation Guide for Use with DOE O 420.1 and DOE O 440.1, Fire Safety Program, dated 9-30-95.

P3 Inventories of fire protection and emergency services audit findings (new, closed, open, delinquent) are decreasing.

P4 Qualifications and training of site fire protection engineering staff meet or exceed the site (or organizational) workload analysis (or equivalent).

P0 FIRE PROTECTION SYSTEM

P5 Fire protection systems (including fire barriers) are inspected, tested and maintained in accordance with the established site program.

P6 Fire alarm activation statistics (number of alarm and cause) are current and accurate.

P7 Fire protection system failure rates (refer to the DOE Fire Protection Handbook for operability requirements) have not exceeded the site historic norm by more than 10 percent.

P8 Maintenance costs for each type of fire protection system have not exceeded the site historic norm by more than 10 percent.
P9 Fire protection system maintenance technicians meet or exceed local industry qualifications and training requirements.

P0 EMERGENCY SERVICES
P10 The site has access to a fleet of mobile apparatus capable of responding effectively and in a timely manner to all credible, anticipated site emergencies as determined by a Baseline Needs Assessment (BNA). Additionally, such assessments address the requirements of NFPA 1710 with any equivalencies documented and approved by the Local DOE Authority Having Jurisdiction.
P11 The emergency services organization satisfies staffing and response levels as defined by the BNA.
P12 Emergency services personnel meet or exceed required minimum qualifications and training as defined by the BNA
P13 Fire department/brigade pre-plans and program documents are complete and current.
P14 Emergency services equipment has been provided as per the BNA and is maintained in accordance with industry standards.
P15 Emergency communications capability is functional throughout the site and meets or exceeds industry standards.
P16 Fire department brigade operational statistics (e.g., number and type of emergency and nonemergency responses, training hours, number of emergency drills) are accurate and current.

8. CRITERIA FOR COST ESTIMATING.
a. Estimating fire damage costs for DOE facilities and programs is essential to categorize necessary investigations and quantify financial loss to the Government for either direct reimbursement or analytical purposes. When estimating loss, it is expected that reporting elements make every attempt to calculate a credible replacement value and to grade such estimate on the financial impact it will have upon the Government. For example, a room-and contents fire involving standard office products may not require the use of a detailed cost estimation and may be calculated according to the institutional knowledge of the reporting authority. However, a total facility loss or losses exceeding $10,000 in replacement value may need to employ estimation techniques described in paragraph 9a below.
b. There are qualified people in DOE and/or contractor organizations who are trained and experienced in cost estimating. These individuals should follow the procedures in DOE G 430.1-1. When estimating costs from fire loss events, these individuals should be involved to identify replacement values using available site data sources such as the Management Analysis Reporting System, the Property Information Database System, and the Facility Information Management System and may include applying an appropriate cost index ratio (e.g., the producer price index) or data published in the periodical, Engineering News Record.
c. Text in paragraph 9 below provides guidance for determining loses based on the value of property that is destroyed or otherwise impaired by a fire.

9. CRITERIA FOR LOSS ESTIMATION.

a. Loss estimation includes the following.

(1) Damage or loss of facilities, inventories, and associated equipment as a result of a fire or a fire suppression system actuation.

(2) All estimated or actual costs to restore DOE property to a reasonable approximation of pre-accident conditions. If an accident involves property that has been lost, completely destroyed, or contaminated to a degree precluding economically justifiable recovery, estimates shall be based on cost for actual replacement and installation of comparable equipment, devices, or materials (including nuclear materials) as well as clean-up and disposal cost for the damaged facility. Such costs should include credit for any salvage value associated with the loss.

(3) In the case of unused, obsolete, or excess building space, equipment, or materials that are not going to be replaced, the cost estimate of the market value at time of accident shall be used.

4) Estimated costs for restoring to a reasonable degree to pre-accident condition, without improvement, all partially lost or damaged DOE property. Include replacement cost for all DOE-owned supplies and costs for decontamination operations where applicable.

(5) Estimated costs for reprocessing and reclaiming partially destroyed and damaged materials. Where applicable, costs for damage resulting from firefighting (e.g., water and smoke damage) should be included.

(6) All post-incident cleanup expenses both inside and outside the facility (e.g., cleanup of hazardous materials or radioactive contamination resulting from fires, or fire suppression system actuation).

(7) All costs for recharging fire suppression systems (gaseous, chemical and foam agents) and decontamination or replacement of fire department equipment.

(8) Costs for damage caused by DOE operations to privately owned property.

(9) Costs for restoration of land and land improvements (sidewalks, roads, etc.) that were damaged as a result of an accident.

(10) Costs for outside specialists or organizations hired to mitigate losses and costs for non-standard labor hours (i.e., above the amount normally worked by the employee) for onsite personnel to restore the property to pre-accident condition

(11) Any lost revenue experienced as a result of the accident. Examples include income-producing processes, such as power generating and transmission facilities or timber sales, whose loss would cause a reduction in payments to the Federal Government.

(12) Estimated damage losses to Government or private wetlands, grasslands, and forest as a result of a wild land fire originating on DOE lands. Restoration costs should also be included along with actual costs to suppress the event.

(13) Labor hours expended by investigative and/or administrative personnel as a result of the incident.

(14) Labor cost for personnel evacuated during a fire including any stand-down costs associated with: investigations, employee relocations, or restoration activities.

b. Loss estimation excludes the following:

(1) Expenses resulting solely from loss of the use or occupancy of facilities affected by the fire, including lost production and research time, unless it becomes necessary to obtain special facilities (e.g., temporary structures) to maintain the facilities' use or occupancy.
(2) All post-accident expenses paid by non-DOE sources (e.g., expenses covered by private insurance).
(3) Expenses to bring property to modern standards.
(4) Normal wear.
(5) Damage to privately owned property caused by other than DOE operations.
(6) Labor hours for onsite firefighters during their normal work shifts.